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ABSTRACT

A study was conducted to determine the ability of kindergarten children to match manuscript, cursive, italic, and D'Nealian handwritten letters to typeset letters, their ability to read letters in these five styles, and the relationship of reading and matching abilities. Children were asked to match typeset distractors to lower case letters handwritten in four styles using a Matching Letter Styles Test, to read the same small letters reproduced on flash cards in the handwriting and typeset styles, and to write the letters "b" and "d" like the four handwriting models. Results showed that students were able to match manuscript style no better than they were able to match italic style to typeset letters. The students were able to read manuscript, italic, D'Nealian style letters and typeset equally well. The results suggest that manuscript does not resemble the print in books for young children, and that teaching manuscript because it more nearly resembles book print is not a legitimate approach. (HTH)

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KINDERGARTEN PERFORMANCE FOR READING AND MATCHING FOUR STYLES OF HANDWRITING

Betty Duvall

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KINDERGARTEN PERFORMANCE FOR READING AND MATCHING FOUR STYLES OF HANDWRITING

Dr. Betty Duvall

Over the past several decades one of the pervasive problems in elementary education has been what style of handwriting to teach. Cursive writing was taught for about seventy years, until manuscript was introduced from England about 1921. Currently, authors of books on teaching language arts suggest manuscript (with a transition to cursive), italic, or D'Nealian.

Educators attempting to select a style for handwriting instruction based on research evidence will find conflicting reports. Turner (1930) and Freeman (1936) found evidence to suggest that manuscript was more legible than cursive. Templin (1960) and Groff (1961), using adult populations, found that a feeling for the quality and legibility of one style of writing and a preference for its use were related to the sex of an individual. Studies by DiSpigno (1978), Lehman (1976), and Thomson (1954) claimed italic to be superior in both speed and legibility. Studies by Freeman, (1936), Hildreth (1945), Reeder (1930), Turner (1930), and Washburn and Morphett (1937) found little evidence to support the speed-superiority of cursive over manuscript.

Writers of current books on teaching of language arts concur that one of the reasons for teaching manuscript is that it more nearly resembles the print in books; so, primary children learn only one graphic representaton of the alphabet for reading and writing (Anderson and Lapp, 1979; Coody and Nelson, 1982; Dehaven, 19791 Hennings, 1982; Marcus, 1977; Norton, 1980; Petty, Petty,

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and Becking, 1981; Rubin, 1975; Savage, 1977).

The ability of young children to recognize different letter styles, within the range of accepted variations of the Roman alphabet, was challenged by Hay (1965). Hay felt that the ability of young children to recognize letters was far greater than most teachers of primary children admitted. Lehman (1976) claimed that manuscript models did not support the child's early experience with print in books and that the lack of unique design features caused confusion and frequent reversals.

One of the suggestions for research on handwriting by Horn (1962) was a need for more evidence on the readability of various styles of writing.

Since reading and writing are both symbolic representations of speech, a decision concerning what style of hndwriting to teach should be assessed in relation to reading. Although most supporters for teaching manuscript give its resemblance to the print in books as a reason for teaching it, evidence was not found to indicate that a resemblance exists and/or matters to the young learner. Studies used to test the ability of children to recognize letters in a variety of styles were not found.

The purpose of the investigator was to study the following: (a) the ability of kindergarten children to match handwritten manuscript, cursive, italic, and D'Nealian letters to typeset, (b) the ablity of kindergarten children to read typeset and handwritten manuscript, cursive, italic and D'Nealian letters, and (c) the relationship of reading and matching ability.

Kindergarten children enrolled in four classes in different elementary schools in Great Falls, Montana, during the 1983-84 school year were asked to match typeset distractors to small letters b, d, g, l, m, n, p, q, u, and y handwritten in four styles using a Matching Letter Styles Test. Students were asked to read the same small letters reproduced on flash cards. Five sets of flash cards were used: Palatino typeset and handwritten manuscript, cursive, italic, and D'Nealian. Students were asked to write b and d like models handwritten in manuscript, cursive, italic and D'Nealian.

A post-test-only design for repeated measurement with the independent variable of style, i.e. manuscript, cursive, italic, D'Nealian was used to test the hypotheses: 1) there will be no difference between the kindergarten students' scores for matching handwritten manuscript, cursive, italic, and D'Nealian letter styles to stypeset, as measured by the Matching Letter Styles Test, 2) there will be no difference between the kindergarten students' scores for reading typeset letters and handwritten letters in manuscript, cursive, italic, and D'Nealian letters, as measured by reading flash cards, 3) there will be no main effect difference between kindergarten students' reading and matching scores, as measured by the Matching Letter Styles Test and reading from flash cards, and 4) there will be no main effect difference between kindergarten students' reading and matching scores for manuscript, cursive, italic, and D'Nealian letter styles, as measured by the Matching Letter Styles Test

and reading from flash cards.

Analysis of variance was employed to determine if differences in scores were significant at the .01 level. A post hoc analysis was used to identify differences. Incorrect responses by letter and style were tabulated for analysis.

All hypotheses were rejected at <.01 level of significance. There was a significant difference between the kindergarten students' scores for matching handwritten manuscript, cursive, italic, and D'Nealian letter styles to typeset, as measured by the Matching Letter Styles test.

In the post hoc analysis of the data from the Matching Letter Styles Test, it was shown that students scored as well when matching italic style to typeset as when matching manuscript style to typeset. The students scored significantly higher when matching manuscript and italic styles to typeset than they did when matching D'Nealian or cursive style to typeset. Students' mean scores for matching D'Nealian style to typeset were higher than their mean scores for matching cursive style to typeset.

There was a difference between kindergarten students' scores for reading typeset letters and handwritten letters in manuscript, cursive, italic, and D'Nealian, as measured by reading flash cards.

In the post hoc analysis of the data from reading flash cards, it was shown that mean scores of the students for reading typeset, italic, D'Nealian, and manuscript style letters were significantly higher than their mean scores for reading cursive

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style letters.

There were main effect differences between kindergarten students' reading and matching scores. In the post hoc analysis, it was shown that students were able to match typeset letters to handwitten letters better than they could read typeset and handwritten letters from flash cards.

According to the results of this study, it appeared that students could read and match italic, manuscript, and D'Nealian styles equally well and better than they could read and match cursive style.

There was a difference between kindergarten students' scores for writing b and d like the models handwritten in manuscript, cursive, italic, and D'Nealian.

In the post hoc analysis of the data, it was shown that students were able to write manuscript, italic, and D'Nealian significantly more times like the model than they were able to write cursive letters b and d like the model.

In all analyses, students scored significantly lower when matching cursive style letters to typeset, when reading letters written in cursive style from flash cards, and when writing cursive style b and d like a cursive model.

The letters b, d, g, l, m, n, p, q, u, and y were used in this study because these letters were identified by kindergarten teachers (based on their experience) as being the letters kindergarten students confuse. The rank order from most-often identified by kindergarten teachers to least-often identified as a letter

confused with another letter was:

b, d, p, q, n, v, g, u, m, l.

The tabulation by style of errors on the Matching Letter Styles Test showed:

1. The letter receiving the highest number of errors was l.

2. The letter receiving the least number of errors was letter m.

3. The letters receiving the highest number of errors by style were: manuscript g, the cursive n, the italic g, and the D'Nealian l.

The tabulation by style of errors made by students reading flash cards showed:

1. The letter receiving the largest number of errors was l.

2. The letter receiving the least number of errors was m.

3. The letters receiving the largest number of errors by style were: manuscript l, cursive n, italic l, D'Nealian l, and typeset g.

The rank order of letters as identified by teachers and the rank order of letters actually missed by kindergarten students appeared to vary. The Wilcoxon matched pairs signed rank test was used. According to this test, teachers could accurately identify the letters students would miss. From the results of the Spearman coefficient of rank correlation, it was shown

that the rank order of the letters tested as identified by teachers was different from the rank order of the errors students made with the exception of the errors made by students matching manuscript style to typeset.

The analyses of the data from this study suggests that manuscript does not resemble the print in books for the young child. Students in this study were able to match manuscript style no better than they were able to match italic style to typeset letters. The students were able to read manuscript, italic, D'Nealian style letters and typeset equally well. Therefore, teaching manuscript because it more nearly resembles the print in books is not a legitimate reasons for selecting manuscript.

The evidence of this study suggests that cursive is not a good selection of a style of writing to teach to the young child. The kindergarten students scored significantly lower on cursive style than on the other styles on all tests. Students scored significantly lower on matching cursive style to typeset. Students scored significantly lower when reading cursive style letters from flash cards. Significantly fewer students wrote the cursive b and d like the cursive model.

The style of handwriting to teach cannot be selected based on the research evidence to support one style over another. Manuscript, italic, or D'Nealian could be selected with regard to beginning reading. The author would like to suggest that slant, interruption, uniformity, joining, and simplicity might be considered as properties of writing. Analyzing the style

of writing based on the properties of writing could help determine which style of writing is easiest to write.

Slant is the degree the writing leans from the vertical. Early experiments by Woodworth (1899) and McAllister (1900 concluded that the most natural slant for writing was between 5o and 15o from the vertical.

Interruption in the natural flow of writing is caused when the pencil is lifted and must be repositioned. Each time the pencil is lifted in the formation of a letter, a new movement (stroke) is required. Lifting the pencil breaks the rhythm. The writer must determine where in "outer space" to begin the second stroke, as well as, in what direction to move.

Uniformity in the width of the letters, historically based on the width of the *o*, prevents confusion. Uniform width gives the writer less to learn and remember when forming the letters. The width of the letters should be examined in styles of writing to determine if the letters *a, b, c, d, e, g, h, k, n, o, p, q, s, u, v, x, y,* and *z* are the same width.

Joining letters results when speed prevents the lifting of a pencil or pen between letters. Not all letters need to be joined, because there must be pauses in the movement of writing to allow the hand to rest. The eye and hand need to be realigned for writing to continue. The joining of letters should be optional to the writer.

Simplicity of letter forms may be a key to legibility, as well as to writing. In this study, the kindergarten students

\scored signigicantly lower on cursive style writing in all tests. It is the author's opinion that the low scores might be attributed to the loops and flourishes that confused the students when reading, matching, and writing.

The author showed (by the analyses based on the properties of writing) that italic is the best alternative. Italic is written at the recommended slant of 5o to 15o slant; italic requires a minimum number of pencil lifts or interruption in the formation of the letters; the italic letters are based on the width of the o and are uniform in width; joining letters within words is optional for the writer; and the italic letters are not burdened with decorative additions but are simple in form. Italic style appears to be a viable alternative to teaching manuscript in the early grades. The terminal italic cursive writing is a simplified form which does not contain the loops and flourishes of other cursive styles. There is no transition from italic print to italic cursive. Further study might be done to verify if the simpler form of italic cursive would be advantageous as a terminal writing style for the older student.

It is the author's opinion, based on this study, other research, experience, and the review of the literature, that italic handwriting style should receive serious consideration. Italic handwriting is easy to learn, easy to write, and easy to read. Because there is no transition from italic print to italic cursive, less time is needed and there is no interruption with the development of children's ability in written communication.

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MATCHING LETTER STYLES TEST

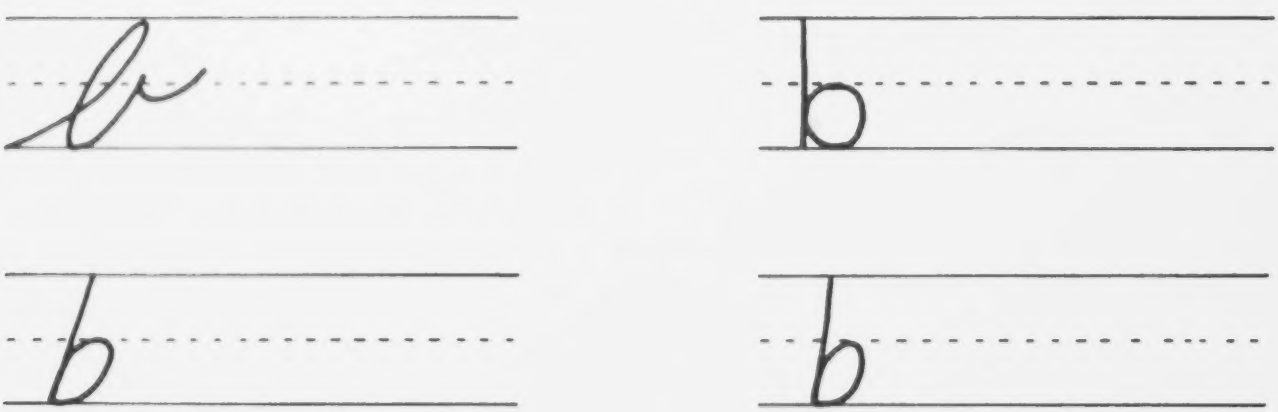
PART I

Name _____ Date _____

School _____ Teacher _____

1.		d	b	q	p		
2.		v	u	y	w		
3.		p	q	b	g		
4.		m	v	u	n		
5.		u	w	v	y		
6.		q	p	d	g		
7.		m	u	n	h		
8.		n	h	v	u		
9.		b	g	q	d		
10.		m	v	h	w		
11.		q	b	d	p		
12.		g	p	d	q		

13.	*n*	**n**	**m**	**h**	**u**	17.	*m*	**w**	**m**	**n**	**u**
14.	*q*	**d**	**g**	**q**	**p**	18.	*v*	**w**	**y**	**u**	**v**
15.	*p*	**g**	**p**	**d**	**q**	19.	*m*	**m**	**h**	**v**	**u**
16.	*b*	**q**	**b**	**d**	**p**	20.	*l*	**i**	**q**	**l**	**j**



MATCHING LETTER STYLES TEST

PART II

Name _____ Date _____

School _____ Teacher _____

1.	u	h w u v	7.	*n*	h u m n
2.	*q*	g b q p	8.	*n*	n u m h
3.	*g*	g q d p	9.	*u*	u h v m
4.	d	p b q d	10.	*l*	j q i l
5.	*d*	q d b p	11.	*d*	p q d b
6.	b	d b p q	12.	*m*	u h n m

13. p | b g q p

14. v | v y u w

15. b | q d p b

16. g | d p b g

17. l | l q i j

18. q | p q g b

19. l | i q l j

20. b | b d q p